UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES
BIOLOGICAL LABORATORY
P. O. BOX 6121, PT. LOMA STATION
SAN DIEGO 6, CALIFORNIA

Sea-surface Temperature Charts, Eastern Pacific Ocean
June 1960

Prepared by

The Staff of the Bureau of Commercial Fisheries
Biological Laboratory, San Diego, California

C O N T E N T S

Acknowledgments

Sea-Surface Temperature Charts, Eastern Pacific Ocean, June 1960

Figure 1.--Mean sea-surface temperatures (°F) derived from approximately 8000 observations. Squares show temperature at weather-ship stations. Numerals on shore are temperatures at coastal and light stations.

Figure 2.--Deviation of sea-surface temperatures (°F) from 30-year mean charts of H. O. 225. Hatched areas are colder than mean.

Figure 3.--Deviation of sea-surface temperatures (°F) from those of June 1959. Hatched areas are colder than 1959.

Figure 4.--Sea-surface temperatures (°F) by 1-degree squares, approximately 2000 observations. Line under temperatures indicates average of two or more observations. Numerals on shore are temperatures at coastal and light stations.

Figure 5.--Deviation of sea-surface temperatures (°F) June 1960 - June 1959 by 1-degree squares. Shaded areas colder in 1960.

James H. Johnson, Chief
Tuna Forecasting Investigation

Acknowledgments

The following organizations and stations contributed data for the June 1960 charts:

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U. S. Navy Fleet Weather Facility, North Island, San Diego, California
U. S. Naval Communication Station Balboa, Fort Amador, Canal Zone
U. S. Navy Branch Hydrographic Offices, Honolulu, Hawaii; Seattle, Washington; San Francisco, California and Wilmington, California
U. S. Bureau of Commercial Fisheries, Biological Laboratories Honolulu, Hawaii and Seattle, Washington
U. S. Bureau of Commercial Fisheries, Exploratory Fishing and Gear Research Base, Seattle, Washington
California Department of Fish and Game, by Harold Clemens and William Craig
Hopkins Marine Station, Pacific Grove, California, by J. P. Balesteri
Humboldt State College by George Allen
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Kelco Company, San Diego, California
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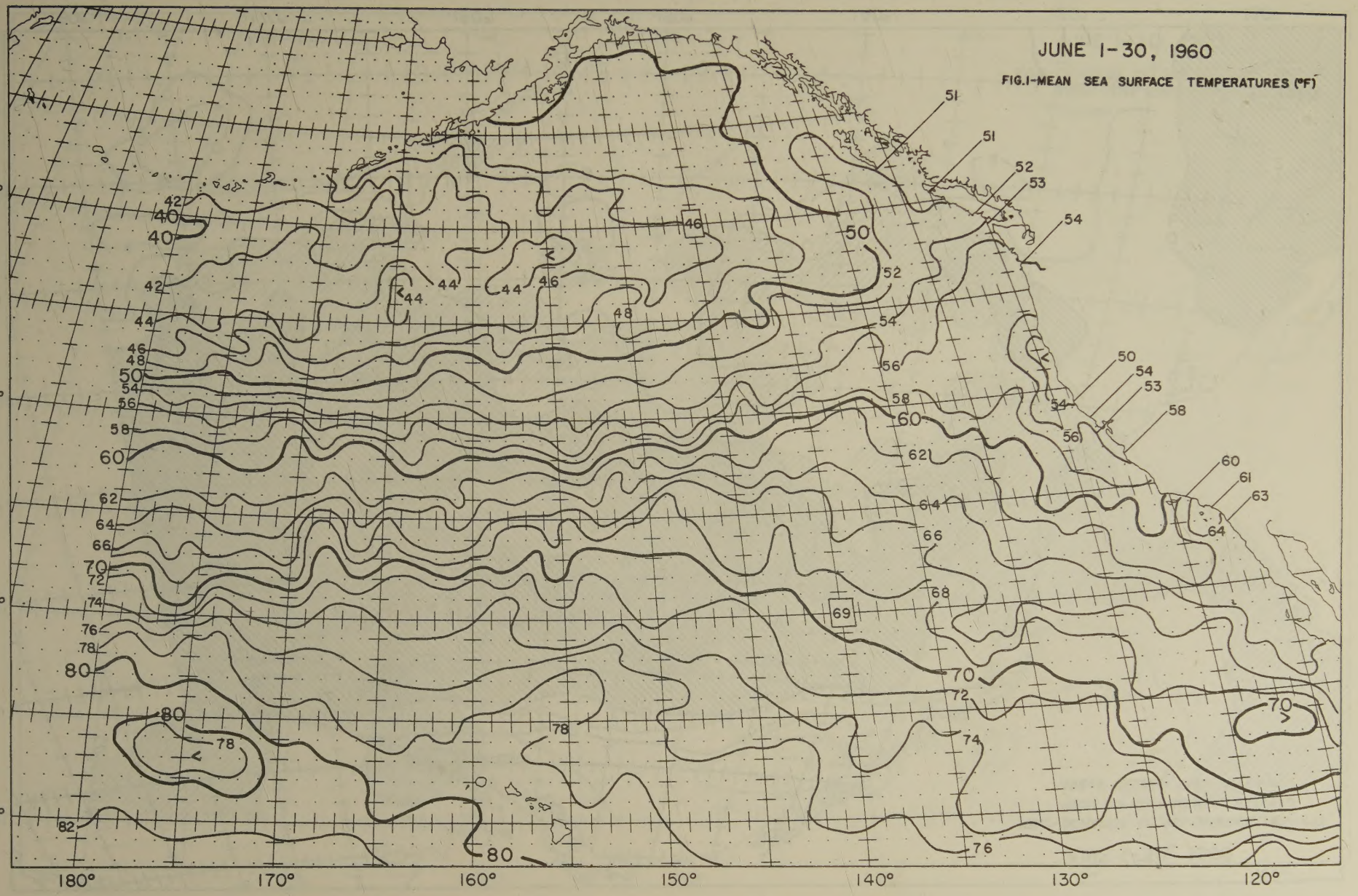
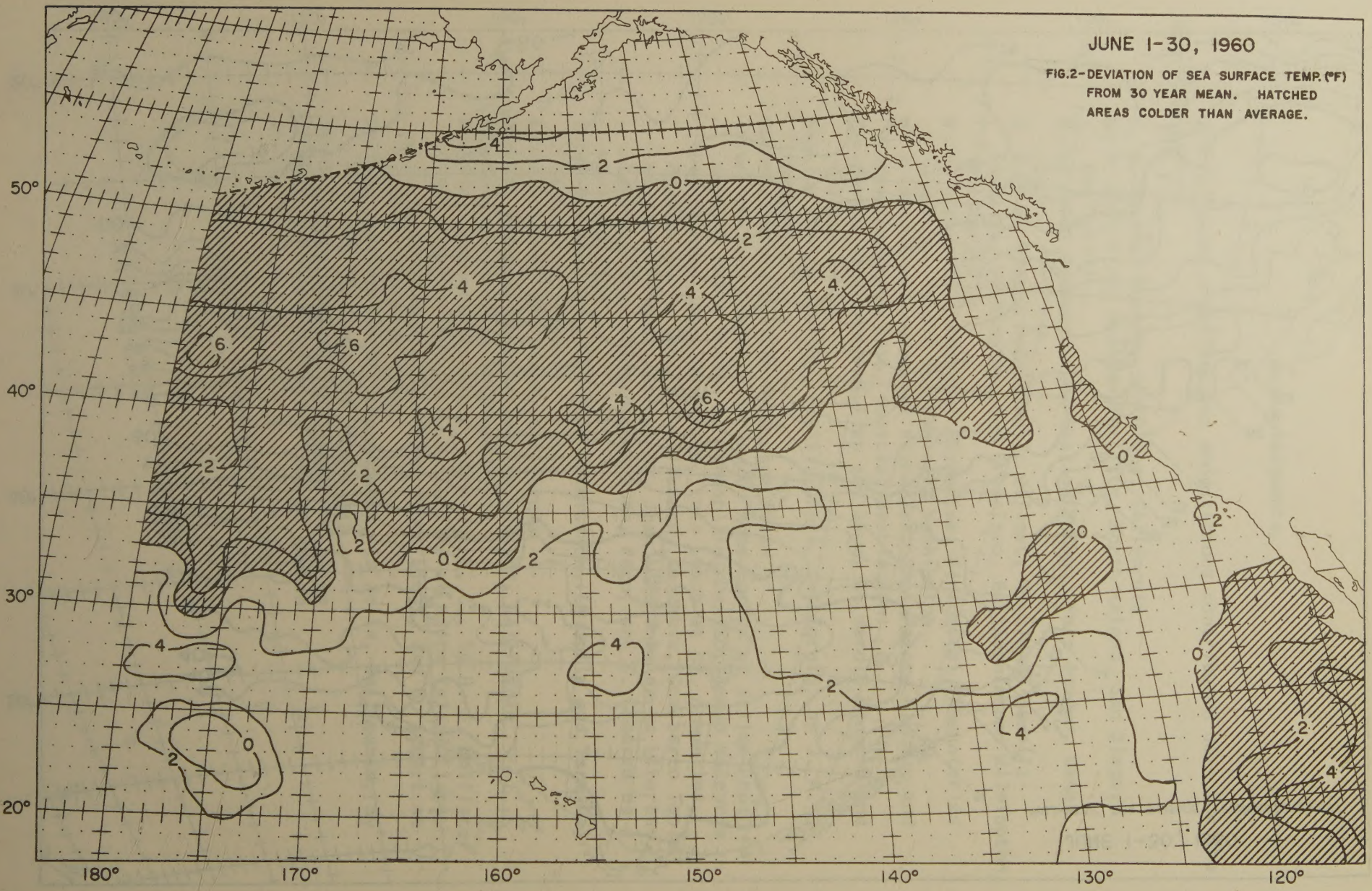
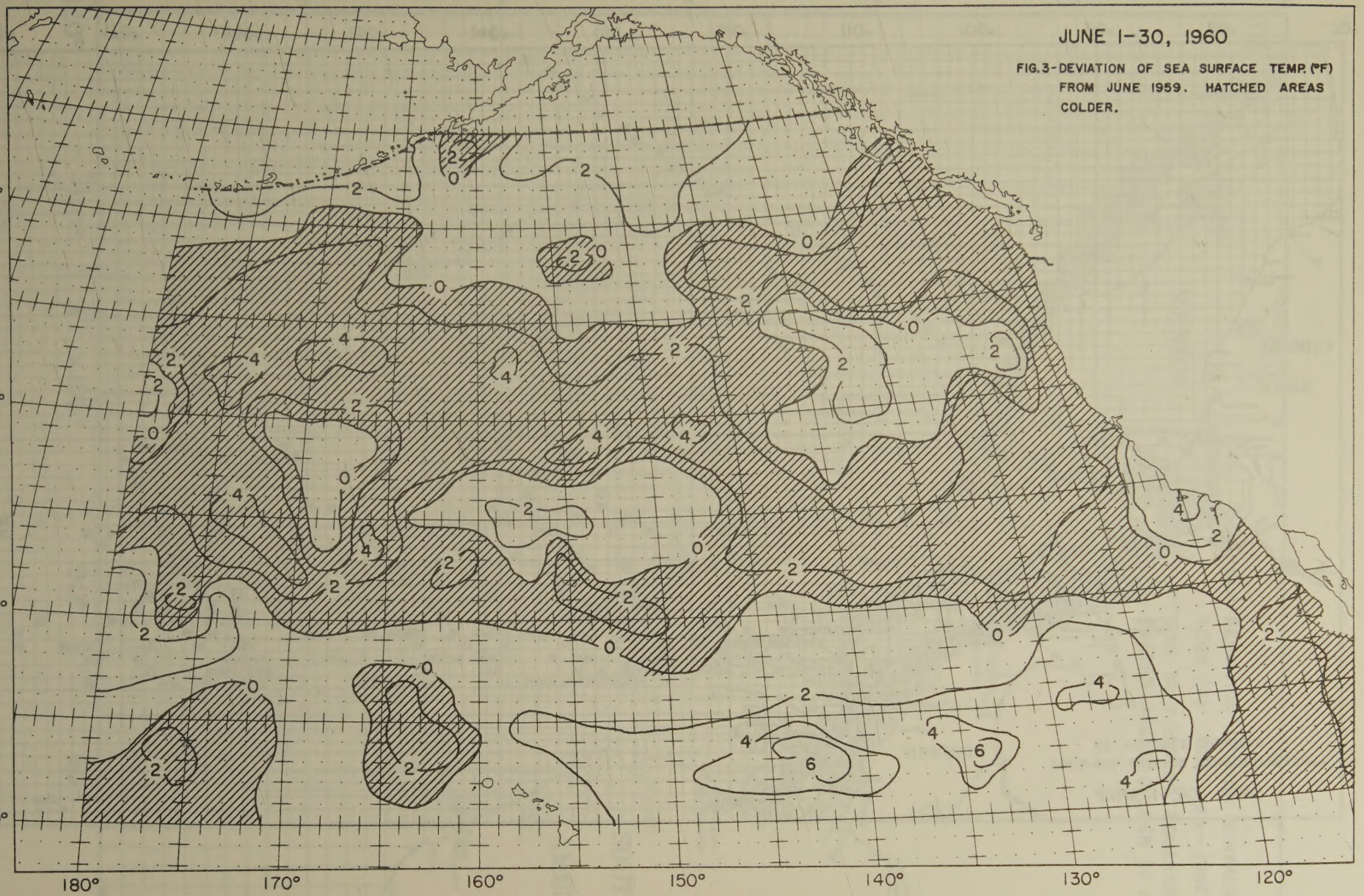
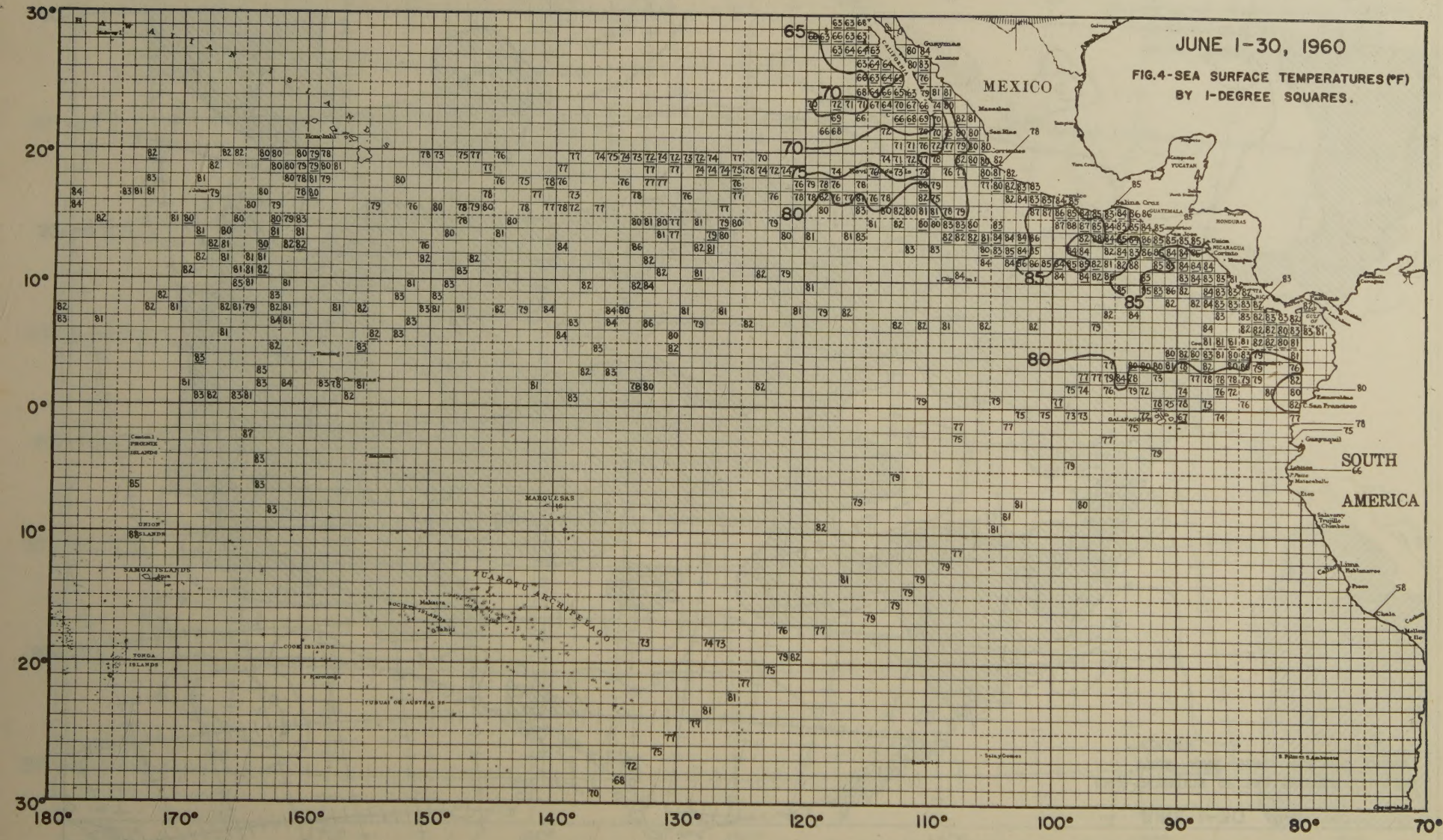
Scripps Institution of Oceanography, La Jolla, California, by Margaret Robinson and Hans Klein
Ships Frances Salman, Trolleggen and Avila
University of Washington by Fred D. Henson


JUNE 1-30, 1960
FIG.1-MEAN SEA SURFACE TEMPERATURES (°F)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
46
69


JUNE 1-30, 1960
FIG.2-DEVIATION OF SEA SURFACE TEMP.(°F) FROM 30 YEAR MEAN. HATCHED AREAS COLDER THAN AVERAGE.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


JUNE 1-30, 1960
FIG. 3 - DEVIATION OF SEA SURFACE TEMP. (°F) FROM JUNE 1959. HATCHED AREAS COLDER.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


JUNE 1-30, 1960
FIG.4-SEA SURFACE TEMPERATURES (°F)
BY 1-DEGREE SQUARES.
MEXICO
SOUTH
AMERICA
HAWAIIAN ISLANDS
Honolulu
MARQUESAS
TUAMOTU ARCHIPELAGO
SOCIETY ISLANDS
Tahiti
Makatea
COOK ISLANDS
TONGA ISLANDS
SAMOA ISLANDS
UNION ISLANDS
PHOENIX ISLANDS
Canton I.
Enderbury I.
Christmas I.
Fanning I.
Palmyra I.
Jarvis I.
Howland I.
Baker I.
GALAPAGOS IS.
Guaymas
Almejas
Mazatlan
San Blas
Manzanillo
Salina Cruz
Tapachula
Puerto Angel
Acapulco
Zihuatanejo
Champerico
GUATEMALA
HONDURAS
NICARAGUA
Corinto
La Union
Amapala
Acajutla
Panama
Cristobal
Balboa
Esmeraldas
San Francisco
Guayaquil
Salaverry
Trujillo
Chimbote
Lima
Callao
Pisco
Chala
Matarani
Ilo
Arica
Iquique
Antofagasta
Valparaiso
Talcahuano
Corral
Puerto Montt
Punta Arenas
Ushuaia
Cape Horn
Buenos Aires
Montevideo
Rio de Janeiro
Santos
Recife
Fernando de Noronha
Natal
Fortaleza
Belem
Manaos
Iquitos
Cayenne
Paramaribo
Georgetown
Port of Spain
Trinidad
Curacao
Maracaibo
Puerto Cabello
La Guaira
Barranquilla
Cartagena
Colon
Puerto Limon
Kingston
Port Antonio
Cienfuegos
Havana
Progreso
Veracruz
Tampico
Galveston
30°
20°
10°
0°
10°
20°
30°
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°

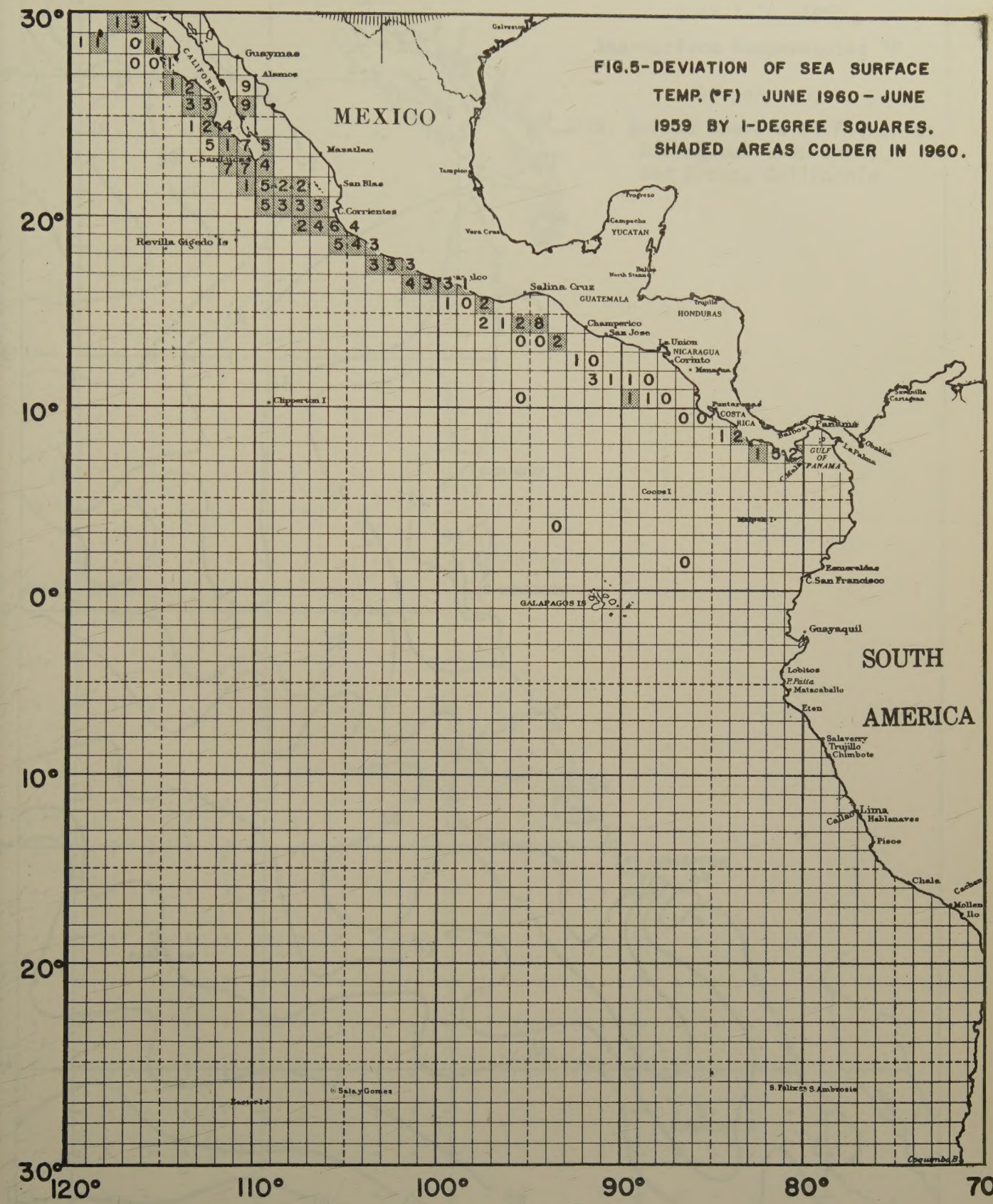
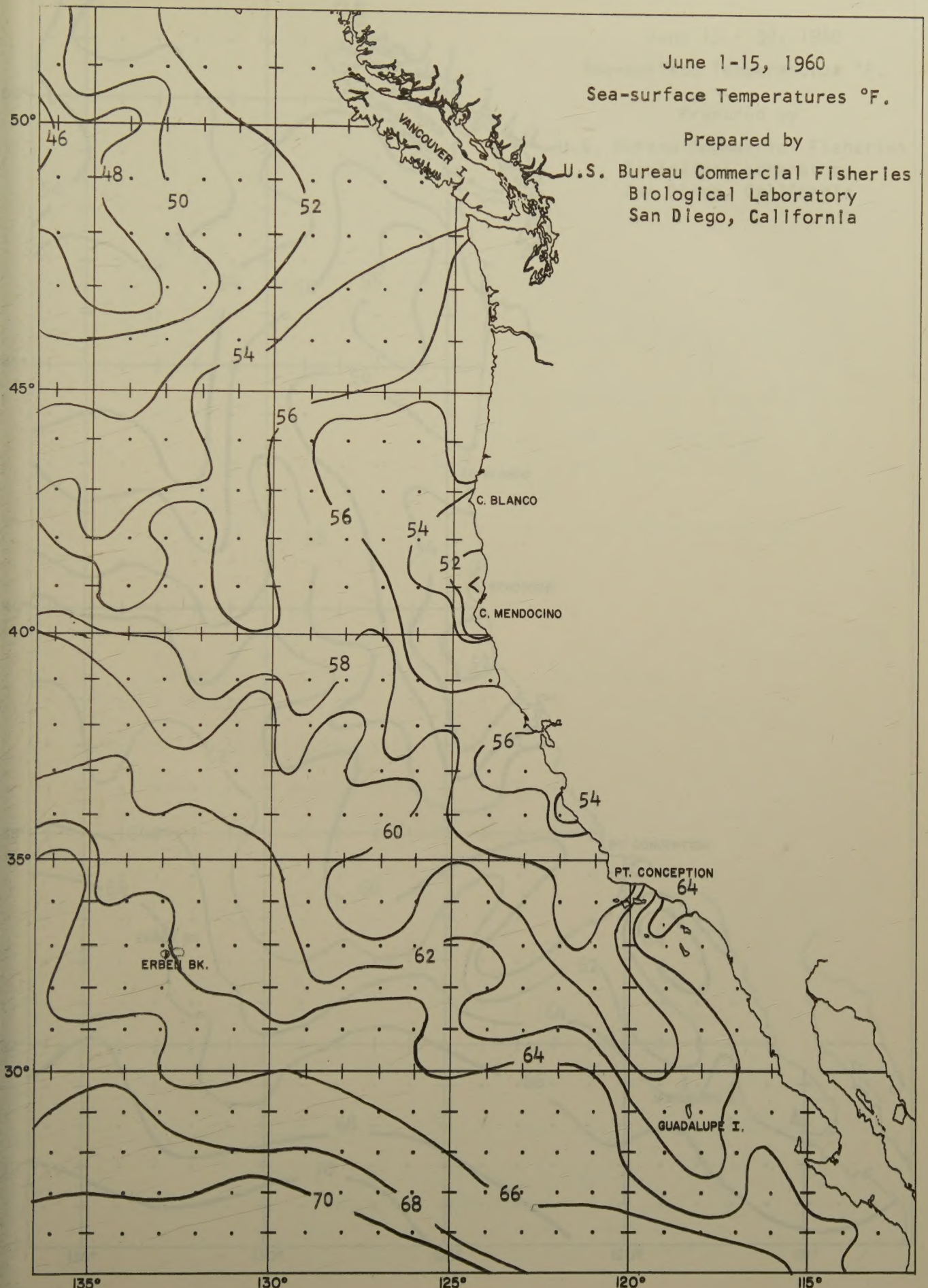
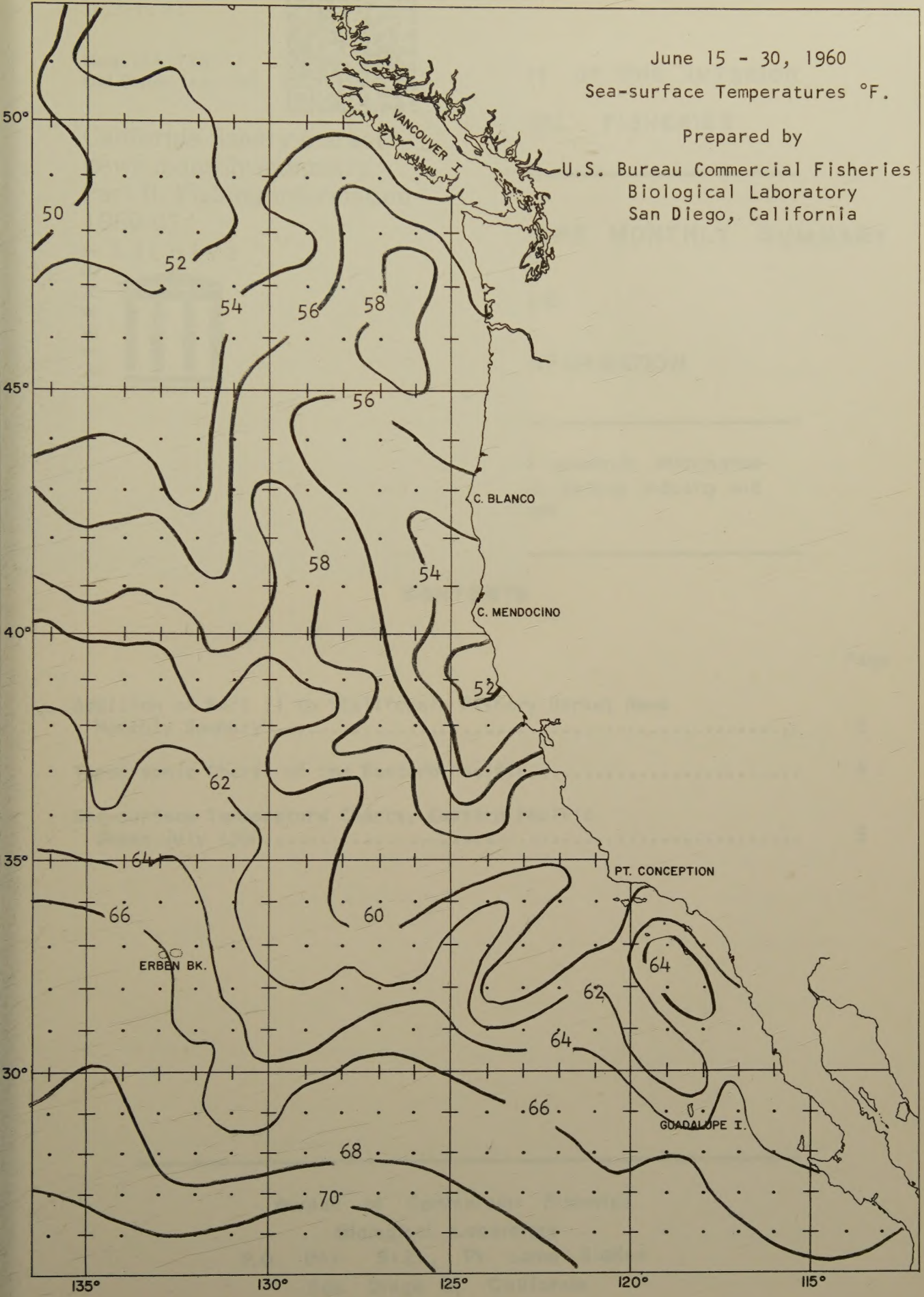


FIG.5-DEVIATION OF SEA SURFACE TEMP. (°F) JUNE 1960 - JUNE 1959 BY 1-DEGREE SQUARES. SHADED AREAS COLDER IN 1960.
MEXICO
GUATEMALA
HONDURAS
NICARAGUA
COSTA RICA
SOUTH AMERICA
GULF OF PANAMA
GALAPAGOS IS
Guaymas
Alamos
Mazatlan
San Blas
C. Corrientes
Revilla Gigedo Is
Salina Cruz
Champerico
San Jose
La Union
Corinto
Managua
Clipperton I
Cocos I
Esmeraldas
C. San Francisco
Guayaquil
Lobitos
P. Pitta
Matacaballo
Eten
Salaverry
Trujillo
Chimbote
Lima
Callao
Hablanaves
Pisco
Chala
Mollendo
Arica
Iquique
Easter I
Sala y Gomez
S. Felix & S. Ambrosio
30°
20°
10°
0°
10°
20°
30°
120°
110°
100°
90°
80°
70°


June 1-15, 1960
Sea-surface Temperatures °F.
Prepared by
U.S. Bureau Commercial Fisheries
Biological Laboratory
San Diego, California
VANCOUVER I.
C. BLANCO
C. MENDOCINO
PT. CONCEPTION
ERBEN BK.
GUADALUPE I.
46
48
50
52
54
56
56
54
52
58
56
54
60
64
62
64
70
68
66
50°
45°
40°
35°
30°
135°
130°
125°
120°
115°


June 15 - 30, 1960
Sea-surface Temperatures °F.
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U.S. Bureau Commercial Fisheries
Biological Laboratory
San Diego, California
VANCOUVER I.
C. BLANCO
C. MENDOCINO
PT. CONCEPTION
ERBEN BK.
GUADALUPE I.
50
52
54
56
58
56
54
52
62
64
66
60
64
62
64
66
68
70
50°
45°
40°
35°
30°
135°
130°
125°
120°
115°